

Amendments to the Claims:

The listing of claims below will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claims 1-21 (canceled)

Claim 22 (currently amended): An RF amplifier apparatus, comprising:

a plurality of amplifiers modules, each amplifier module comprising a nonlinear switch-mode RF amplifier having an RF input configured to receive an common RF input signal, and a power controller having a magnitude control input;

a magnitude driver, responsive to a magnitude input signal, operable to provide power level-magnitude control signals to said magnitude control inputs of ~~signals to said~~ plurality of ~~amplifiers~~ power controllers; and

a summer configured to receive RF output signals from said plurality of amplifiers modules and provide a resultant RF output signal,

wherein said RF input signal drive one or more of said nonlinear switch-mode RF amplifiers between a hard-on state and a hard-off state, without operating said nonlinear switch-mode RF amplifiers in linear operating regions for any appreciable percentage of time.

Claim 23 (previously presented): The RF amplifier apparatus of Claim 22 wherein the RF input signal is a phase modulated RF input signal.

Claim 24 (currently amended): The RF amplifier apparatus of Claim 22 wherein each ~~amplifier is coupled to an associated~~ power controller ~~has~~ having a power supply input port configured to receive a DC supply voltage, ~~a control input configured to receive an associated power level control signal from said magnitude driver,~~ and a power control output configured to provide a ~~power control~~ variable supply output voltage signal to a supply input of its associated nonlinear switch-mode RF amplifier.

Claim 25 (canceled)

Claim 26 (currently amended): The RF amplifier apparatus of Claim 2 ~~[[5]]~~4 wherein each power controller comprises a switch-mode converter configured to receive the DC supply voltage and provide ~~an~~ the variable supply output voltage, said variable supply output voltage that approximates a desired operating voltage level of ~~an~~ said each power controller's associated nonlinear switch-mode power RF amplifier.

Claim 27 (currently amended): The RF amplifier apparatus of Claim 26 wherein each power controller further comprises a regulator coupled between ~~having an input coupled to an output of an associated switch mode converter, and an output configured to provide the power~~ the supply input of its associated nonlinear switch-mode RF amplifier

and an output of the switch-mode power converter~~control output signal to an associated~~
~~nonlinear switch mode power amplifier.~~

Claim 28 (currently amended): The RF amplifier apparatus of Claim 2[[6]]7
wherein each switch-mode converter comprises a switch-mode power supply.

Claim 29 (currently amended): The RF amplifier apparatus of Claim 22 wherein
said ~~power level~~ magnitude control signals derive from a common ~~power level~~ magnitude
control signal generated by said magnitude driver.

Claim 30 (currently amended): The RF amplifier apparatus of Claim 22 wherein
said ~~power level~~ magnitude control signals are individual and separate ~~power level~~
magnitude control signals generated for each associated ~~amplifier~~ power controller.

Claim 31 (currently amended): The RF amplifier apparatus of Claim 2[[5]]2
wherein each nonlinear switch-mode ~~power~~ RF amplifier comprises a Class D amplifier.

Claim 32 (currently amended): The RF amplifier apparatus of Claim 2[[5]]2
wherein each nonlinear switch-mode ~~power~~ RF amplifier comprises a Class E amplifier.

Claim 33 (currently amended): The RF amplifier apparatus of Claim 2[[5]]2
wherein each nonlinear switch-mode ~~power~~ RF amplifier comprises a Class F amplifier.

Claim 34 (currently amended): A method of amplifying an RF signal, comprising:

applying an RF input signal to RF inputs of a plurality of nonlinear switch-mode RF amplifiers, said RF input signal operable to drive one or more of said nonlinear switch-mode RF amplifiers repeatedly between a hard-on state and a hard-off state, without operating said one or more nonlinear switch-mode RF amplifiers in linear operating region for any appreciable percentage of time.;

applying ~~power-drive~~ magnitude control signals to ~~power-magnitude~~ control inputs of a plurality of power controllers associated with said plurality of nonlinear switch-mode RF amplifiers;

amplifying said RF input by said plurality of nonlinear switch-mode RF amplifiers, in accordance with associated ~~power-drive~~ magnitude control signals; and

summing RF output signals from the plurality of nonlinear switch-mode RF amplifiers to form a resultant RF output signal.

Claim 35 (previously presented): The method of Claim 34 wherein the RF input signal is a phase modulated signal.

Claim 36 (currently amended): The method of Claim 34, further comprising:

applying a DC supply voltage to power supply input ports of each of said plurality of ~~power controllers~~amplifiers; and

generating ~~power control~~ a plurality of variable supply output voltages ~~signals for~~ controlling each of said plurality of amplifiers and;

applying said variable supply output voltages to supply inputs of said plurality of nonlinear switch-mode RF amplifiers.

Claim 37 (currently amended): The method of Claim 36 wherein generating ~~power control signals~~ a plurality of variable supply output voltages comprises converting said DC supply voltage to ~~asaid variable supply output voltages, said~~ plurality of DC variable supply output voltages approximating desired operating voltage levels of said plurality of nonlinear switch-mode RF amplifiers.

Claim 38 (currently amended) The method of Claim 37 wherein generating ~~power control signals~~ a plurality of variable supply output voltages further comprises regulating said DC variable supply output voltages ~~approximating desired operating voltage levels of said plurality of amplifiers to provide said power control signals.~~

Claim 39 (currently amended): The method of Claim 37 wherein converting said DC supply voltage to a plurality of ~~DC variable supply output~~ voltages approximating desired operating voltage levels of said plurality of amplifiers is performed by an associated plurality of switch-mode ~~power~~ converters.

Claim 40 (canceled)

Claim 41 (currently amended): The method of Claim ~~[[40]]~~³⁴ wherein each switch-mode power amplifier comprises a Class D amplifier.

Claim 42 (currently amended): The method of Claim ~~[[40]]~~34 wherein each switch-mode power amplifier comprises a Class E amplifier.

Claim 43 (canceled)

Claim 44 (canceled)

Claim 45 (canceled)

Claim 46 (canceled)

Claim 47 (new): An RF amplifier apparatus, comprising:

a plurality of RF amplifier modules, each RF amplifier module having a power control circuit and a nonlinear RF amplifier, and each RF amplifier module configured to receive an RF input signal; and

a summer configured to receive RF output signals from said plurality of amplifier modules,

wherein said RF input signal drives one or more of said nonlinear RF amplifiers repeatedly between a hard-on state and a hard-off state, without operating said nonlinear RF amplifiers in linear operating regions for any appreciable percentage of time.

Claim 48 (new): The RF amplifier apparatus of Claim 47 wherein the nonlinear RF amplifiers comprise switch-mode amplifiers.

Claim 49 (new): The RF amplifier apparatus of Claim 47 wherein the power control circuits each include a switch-mode converter configured to receive a DC supply voltage and provide a converted supply voltage.

Claim 50 (new): The RF amplifier apparatus of Claim 49 wherein the switch-mode converters provide ramp and level control.

Claim 51 (new): The RF amplifier apparatus of Claim 47 wherein the power control circuits each include a regulator configured to provide ramp and level control.

Claim 52 (new): The RF amplifier apparatus of Claim 48 wherein each of the power control circuits further includes a regulator coupled between an output of the switch-mode converter and power control input of an associated nonlinear RF amplifier.

Amendments to the Drawings:

The attached sheets of drawings include changes to Figures 7 and 14-16 of original drawing sheet numbers 3/12 and 6/12 (i.e. 3 of 12 and 6 of 12). These sheets replace the original drawings sheets numbered 3/12 and 6/12. Clarifying notations to Figures 7, 14 and 16 have been made so that the relationship and coordination of the various figures is more clearly conveyed. No new matter is entered by the drawing changes, and the specification as filed is consistent with and fully supports the changes made. In particular, the first full paragraph on page 16 of the specification explain that the "switch mode power amplifier (SMPA) blocks" may be "realized as shown in Figure 7, for example."

Attachments: Replacement Sheets
 Annotated Sheets Showing Changes